Recycler BPM Calibration Application

- Current Status
- Data so far
- Where we go from here

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Notes:

Current Status

- Prototype application at R57
  - controlls signal generator
  - collects closed orbit data
- Has sucessfully been used at MI50
- Currently outputs
  - graphs
  - spreadsheet data

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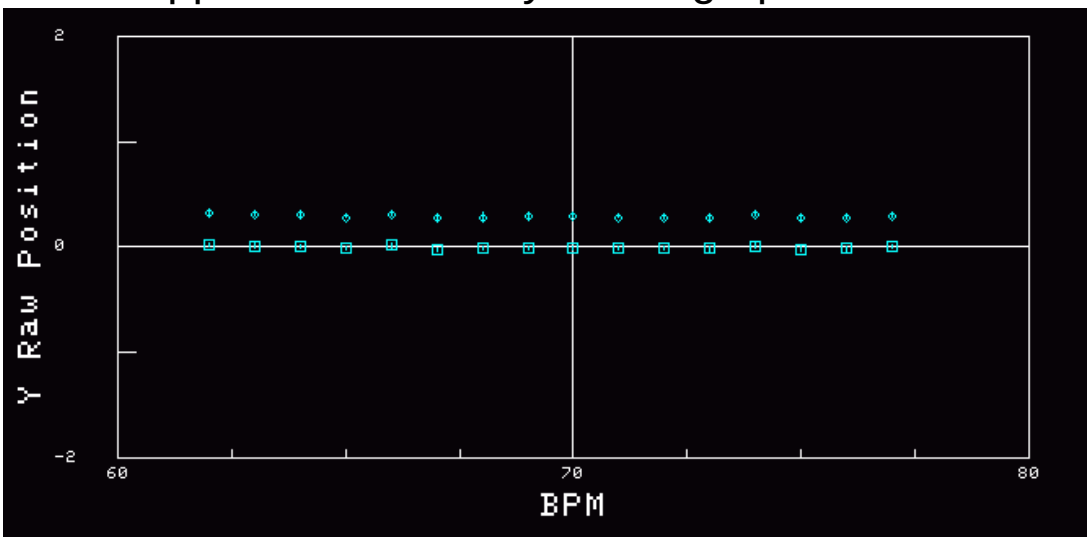
Notes:

Outputs: Graphs

The application currently draws graphs like:



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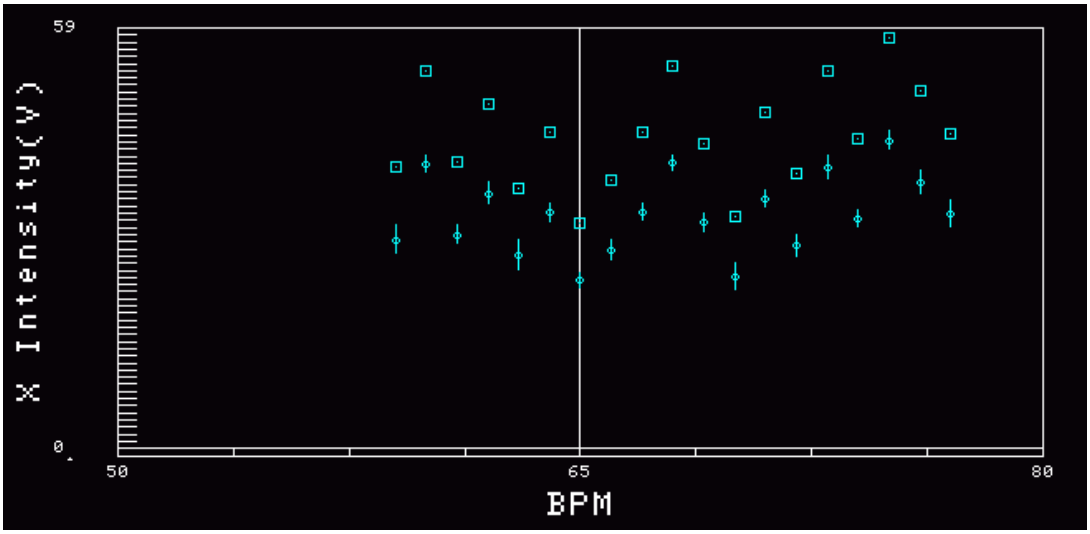
Notes:

- average unscaled position for two passes is plotted
- boxes show A=B
- diamonds show 0.5*A = B
- vertical lines show scaled RMS error
- individual problem BPMs easy to spot:
  - reversed channels (diamond on wrong side)
  - shorted channel (diamond too near center)
  - high noise (wide error bar)

Outputs: Graphs

And like:



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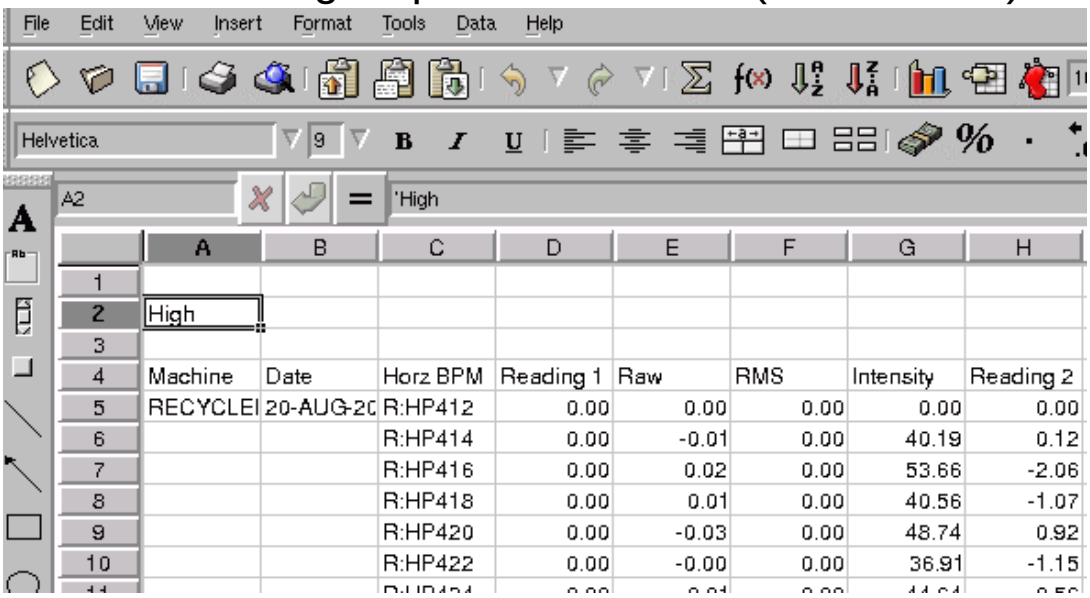
Notes:

- average unscaled position for two passes is plotted
- boxes show A=B
- diamonds show 0.5*A = B
- vertical lines show scaled RMS error
- shows variance in recieved signal at different BPMS from calibration signal

Output: Spreadsheets

We can also get spreadsheet data (As .csv files)



	A	B	C	D	E	F	G	H
1								
2	High							
3								
4	Machine	Date	Horz BPM	Reading 1	Raw	RMS	Intensity	Reading 2
5	RECYCLEI	20-AUG-20	R:HP412	0.00	0.00	0.00	0.00	0.00
6			R:HP414	0.00	-0.01	0.00	40.19	0.12
7			R:HP416	0.00	0.02	0.00	53.66	-2.06
8			R:HP418	0.00	0.01	0.00	40.56	-1.07
9			R:HP420	0.00	-0.03	0.00	48.74	0.92
10			R:HP422	0.00	-0.00	0.00	36.91	-1.15

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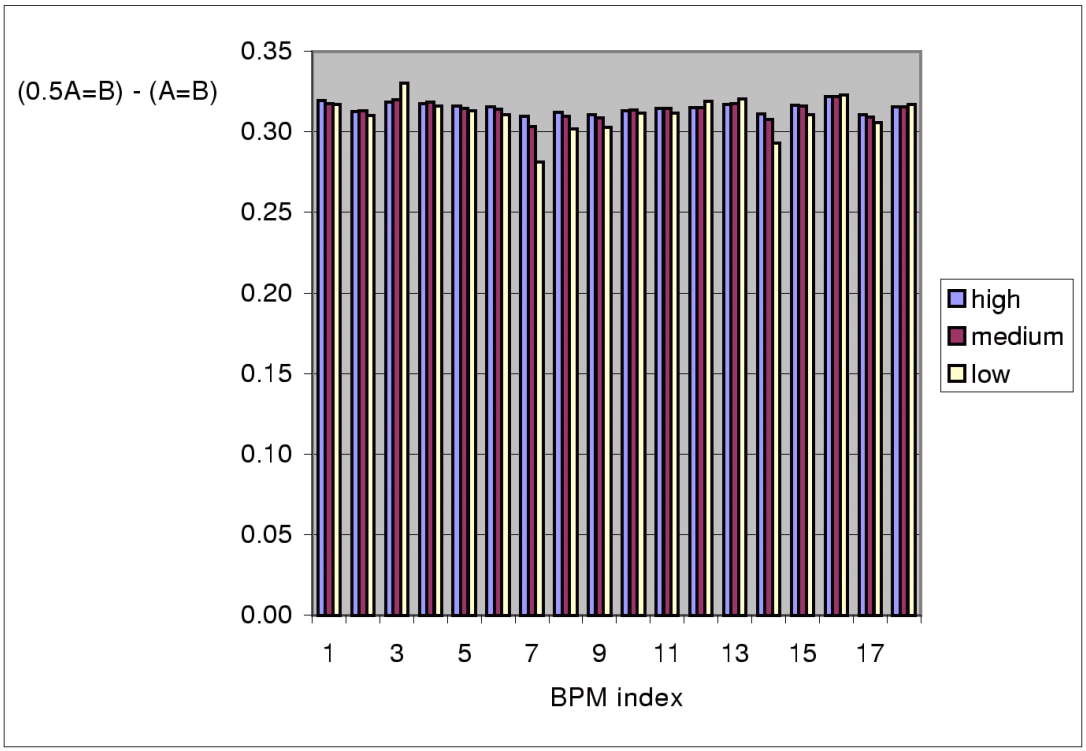
Notes:

Output: Spreadsheets

This has let Stephen do stuff like:



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Notes:

Data so far

- Spreadsheet data has been most interesting; allows comparing intensities
- electrical offset may be intensity sensitive (perhaps need a (kA-B)/(kA+B) correction?)
- Application cannot set calibration constants need electrical vs physical separation

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Notes:

Where we go from here

Update of Application

- Run all 3 intensities
- Log results in database
- Save results in spreadsheet
- Display all BPMs at one time
- Display single BPM over time
- Better graph labelling

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Notes: Notes on slide.